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The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte UTHAMALINGAM BALACHANDRAN, RICHARD W. SIEGEL
and THOMAS R. ASKEW

Appeal No. 1997-0534
Application 08/171,904

ON BRIEF

Before JERRY SMITH, FLEMING, and LALL, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection¹ of claims 1, 2, 4, 5 and 7 to 9, which

¹An amendment after the final rejection was filed [paper no. 14]. Its entry was not approved by the Examiner [paper no. 15].

constitute all the pending claims in the application.

The invention relates to a method of preparing a high temperature superconductor. High temperature superconductor materials are polycrystalline, and the grain boundaries of these materials can act as weak links causing drastic reduction in current transport across the grain boundaries, thereby degrading electrical transport properties. The invention is intended to improve electrical transport properties by ameliorating the grain boundary weak links. This is achieved by adding ultra-fine grained superparamagnetic particles to the grain boundaries of the polycrystalline superconductor material. The invention is further illustrated by the following claim.

1. A method of preparing a high temperature superconducting material, comprising the steps of:

(a) providing a powdered high temperature superconductor having particles of micron size range;

(b) providing ultra-fine grained superparamagnetic particles having diameters of from about 10 to 500 Angstroms, and having a localized magnetic susceptibility behavior arising from their size being in the range of about 10 to 500

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Angstroms in diameter; and

(c) combining said ultra-fined grained superparamagnetic particles with said powdered high temperature superconductor to form a solid mass comprised of crystalline grains of said superparamagnetic particles and said powdered high temperature superconductor, said superparamagnetic particles constituting about 0.1 -0.3% by weight of the total, and having grain

boundaries between said grains of said powdered high temperature superconductor and a dispersion of said superparamagnetic particles on the grain boundaries, thereby enhancing intergrain critical current density of said high temperature superconducting material.

The Examiner relies on the following reference:

Wijeyesekera et al. (Wijeyesekera) 4,999,338 Mar. 12, 1991

Claims 1, 2, 4, 5 and 7 to 9 stand rejected under 35 U.S.C. § 112, second paragraph as well as under 35 U.S.C. § 102 over Wijeyesekera and under 35 U.S.C. § 103 over Wijeyesekera.

Rather than repeat the positions and the arguments of Appellants and the Examiner, we make reference to the brief and the answer for their respective positions.

OPINION

We have considered the rejections advanced by the

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Examiner. We have, likewise, reviewed Appellants' arguments against the rejections as set forth in the brief.

It is our view, after consideration of the record before us, that the rejections under 35 U.S.C. § 112, under 35 U.S.C. § 102 and under 35 U.S.C. § 103 are not proper. Accordingly, we reverse.

We now consider the various rejections.

Rejection under 35 U.S.C. § 112, second paragraph

The Examiner rejects claims 1, 2, 4, 5 and 7 to 9 under 35 U.S.C. § 112, second paragraph. The Examiner asserts [Answer, page 3] that these claims are indefinite because the phrase "of micron size range" in the independent claims 1 and 7 is undefined. Appellants contend [Brief, page 6] that the specification at "page 4, fifth line from bottom" recites the micron size as about 5 microns and that such terminology is quite common in the "mechanically ground, powdered high temperature superconductor materials."

The Examiner also contends [Answer, page 3] that the phrase "the total" in independent claims 1 and 7, and hence in the dependent claims, lacks a proper antecedent basis. Appellants argue [Brief, page 7] that "one of ordinary skill would understand this ... must be relative to the 'total' weight."

We first review the general requirements within the meaning of 35 U.S.C. § 112, second paragraph. The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). In making this determination, the definiteness of the language employed in the claims must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. Id.

The Examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C.

§ 112, second paragraph, is whether the claims meet the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms is permitted even though the claim language is not as precise as the Examiner might desire. If the scope of the invention sought to be patented cannot be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. § 112, second paragraph, is appropriate.

Thus, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. As stated above, if the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. See Ex parte Porter, 25 USPQ2d 1144, 1146 (Board. Pat. App. & Int. 1992).

Furthermore, appellants may use functional language, alternative expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As

noted by the Court in In re Swinehart, 439 F.2d 210, 212-13, 160 USPQ 226, 229 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.

With this as background, we evaluate the above specific positions of the Examiner and Appellants. We are of the opinion that Appellants are correct in that the phrase "micron size" taken in the context of the specification and the common knowledge of artisans in the mechanically ground powdered superconductor materials has a clear meaning as to establish the scope of the claims. As to the alleged missing antecedent basis, the Examiner is being highly technical. We are convinced that the recited phrase "total" clearly connotes "total weight". Therefore, we do not sustain the rejection of claims 1, 2, 4, 5 and 7 to 9 under 35 U.S.C. § 112, second paragraph.

Rejection under 35 U.S.C. § 102

The Examiner has rejected claims 1, 2, 4, 5 and 7 to 9 as being anticipated by Wijeyesekera.

We note that a prior art reference anticipates the

subject of a claim when the reference discloses every feature of the claimed invention, either explicitly or inherently (see Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed. Cir. 1997) and RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984)).

We take the exemplary claim 1. After considering the Examiner's position [Answer, pages 4 and 7 to 9] and Appellants' arguments [Brief, pages 7 to 8], we are persuaded by Appellants that Wijeyesekera does not show all the limitations recited in claim 1. For example, Wijeyesekera does not anticipate the superconductor particles and the superparamagnetic particles to be of the claimed different sizes. Furthermore, we have reviewed the declaration by Goretta (Declaration), attached as Appendix B to the brief. We share the Examiner's concern about Goretta's assertion [Declaration, page 2] that the "teaching of 5.67% -82 weight percent (converted from their 5-80 volume percent)" would not lead him to use the claimed 0.1-0.3 weight percent to achieve the unexpected improvement in electrical properties because

the Declaration does not show this conversion [Answer, page 8]. Nevertheless, the Examiner has not shown, and we have not found, where and how Wijeyesekera anticipates the claimed weight ratio of 0.1-0.3% by weight. Therefore, we do not sustain the anticipation rejection of claim 1 and other claims, 2, 4, 5 and 7 to 9 over Wijeyesekera as they all contain the same or corresponding limitations as claim 1.

Rejections under 35 U.S.C. § 103

The Examiner has lastly rejected claims 1, 2, 4, 5 and 7 to 9 as being obvious over Wijeyesekera.

Before discussing the specific rejections, we outline the criteria for a rejection under 35 U.S.C. § 103. As a general proposition in an appeal involving a rejection under 35 U.S.C. § 103, an Examiner is under a burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re

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Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

We take claim 1 as illustrative. We have reviewed the Examiner's position [Answer, pages 5 to 6 and 7 to 9] and the Appellants' position [Brief, pages 8 to 9] and the Declaration.

We do not agree with the Examiner's statement that the "[d]etermination of the specific ingredient amounts would have been well within the realm of routine experimentation These parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product" [Answer, page 6]. In our view, the Examiner is indulging in recreating the Appellants' claimed invention by employing the Appellants' invention as a blue print. There is no basis, scientific logic or other evidence, for this

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assertion. Without such evidence, the obviousness rejection of claim 1 over Wijeyesekera is not sustained. For the same rationale, the obviousness rejection of claims 2, 4, 5 and 7 to 9 over Wijeyesekera is also not sustained as they all contain the same, or corresponding, limitations.

In conclusion, we reverse the Examiner's final rejection of claims 1, 2, 4, 5 and 7 to 9 under 35 U.S.C. § 112, second paragraph as well as under 35 U.S.C. § 102 and under 35 U.S.C. § 103.

REVERSED

JERRY SMITH

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PARSHOTAM S. LALL)	
Administrative Patent Judge)	

PSL:pgg
Foley & Lardner
One IBM Plaza, Suite 3300
330 North Wabash Avenue
Chicago, IL 60611